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RE: U.S. Patent Application
Serial No. 09/725,849

Dear Sir or Madame:

We are in receipt of an Examiner's Answer for Serial No. 09/725,849. This case does not belong to our firm. Upon a review of PAIR, we discovered that this case belongs to Birch, Stewart, Kolasch & Birch in Falls Church, VA. Therefore, we are returning the Examiner's Answer to the Patent Office for redirection to the appropriate location.

Thank you in advance for your assistance in this matter.

With best regards,

Very truly yours,

ROBINSON INTELLECTUAL PROPERTY LAW OFFICE, P.C.

Eric J. Robinson

EJR/pll
Enclosures

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/725,849
Filing Date: November 30, 2000
Appellant(s): PARK ET AL.

James T. Eller, Jr.
For Appellant

EXAMINER'S ANSWER

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This is in response to the appeal brief filed June 14, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences, which, will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1-8, 11-14, 16 and 18 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,297,792	Takahashi	10-2001
6,369,469	Miwa et al.	05-2002
5,907,313	Kubota et al.	05-1999

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-5, 8 and 11-14, 16 and 20-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi (US patent NO. 6,297,792).

As to independent claim 1, Takahashi (figure 6) teaches a liquid crystal display (10) that includes a liquid crystal pixel cells (16) arranged at each intersection between a plurality of lines (Y1-Ym) and a plurality of data lines (X1-Xn) in a matrix type and being driven with thin film transistors (40 in figures 4 and 5) (col.11, lines 28-52).

Takahashi teaches applying a first signal to the liquid crystal pixel cells through the data lines for charging thereof during the beginning of a frame (period) and applying a second signal different from the first signal to the liquid crystal pixel cells through the

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data lines for discharging thereof during an ending of the frame (period) (abstract, col. 14, lines 45-63, col. 14 line 64 through col. 15, line 4, col. 15, lines 41-63, col. 19, lines 18-39, and figures 8a-8d and 9a-9b).

As to claim 4, as can be seen from figures 8a-8d and 9a-9b; the gate pulse is applied twice during one period (first half of the period and the second half of the period).

As to claim 5, Takahashi (figure 6) teaches a liquid crystal display (10) that includes a liquid crystal pixel cells (16) arranged at each intersection between a plurality of lines (Y1-Ym) and a plurality of data lines (X1-Xn) in a matrix type and being driven with thin film transistors (40 in figures 4 and 5) (col.11, lines 28-52). Takahashi teaches applying a first signal to the liquid crystal pixel cells for charging thereof during the beginning of a frame (period) and applying a second signal to the liquid crystal pixel cells for discharging thereof during an ending of the frame (period) (abstract, col. 14, lines 45-63, col. 15, lines 41-63, col. 19, lines 18-39, and figures 8a-8d and 9a-9b). Figures 8a-8d and 9a-9b; the gate pulse is applied twice during one period (first half of the period and the second half of the period) (col. 14, lines 9-17).

As to claim 8, Takahashi teaches generating gate pulse (scanning pulse) at a start of the frame and a midpoint of the frame (col. 14, lines 41-63).

As to claim 11, Takahashi teaches a liquid crystal display that includes applying a first signal to the liquid crystal pixel cells for charging thereof during the beginning of a frame (period) and applying a second signal to the liquid crystal pixel cells for completely discharging thereof during an ending of the frame (period) (abstract, col. 14,

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lines 45-63, col. 15, lines 32-37 and 41-63, col. 19, lines 18-39, and figures 8a-8d and 9a-9b) and figures 8a-8d and 9a-9b.

As to claim 12, as best understood by the examiner, Takahashi teaches a discharging period takes most time in one period (see figures 9A-9B).

As to claim 13, figures 8a-8d substantially read on the claims by having a pulse of one polarity in the beginning of the period and then substantially no charges are applied in the middle, and a pulse of opposite polarity at the end (col. 14, lines 41-63).

As to claim 14, as can be seen from figures 8a-8d and 9a-9b; the gate pulse is applied twice during one period (first half of the period and the second half of the period) (abstract). Takahashi also teaches applying no charge to the pixel element during an ending of the frame, and applying an opposite charge compared with a beginning of previous frame to the pixel element during a beginning of the next frame (figures 8A-8D and col. 14, lines 35-63).

As to claim 16, as discussed above, since the starting of the discharge is at the second half of the period; then the gate pulse is applied at the mid-point.

As to claim 20, as can be seen above, Takahashi shows that the first and second signals are applied through the data lines and are different from each other (one negative and the other positive).

As to claim 21, as can be seen above, the first signal and the second signal are different from each other.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 and 6-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Miwa et al. (US patent NO. 6,369,469; hereinafter referred to as Miwa).

As to claims 2 and 6, Takahashi teaches all the limitations of claims 2 and 6 except the citation that the liquid crystal layer formed of any one of ferro-electric liquid crystal and an anti-ferro-electric liquid crystal.

However, Miwa teaches a liquid crystal display system that includes applying in one frame period, first and second signal (figure 3, abstract and col. 4, lines 4-18), and wherein a ferro-electric display can be used (col. 5, lines 47-52).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use Miwa's teaching having a ferro-electric display to be used in Takahashi's device because as it is known in the art, ferro-electric display has a good memory characteristics, and uses less power.

As to claims 3 and 7, Takahashi teaches all the limitations of claims 3 and 7 except the citation that the liquid crystal display includes a liquid crystal layer formed of twisted nematic liquid crystal having a response speed of less than 10ms.

However, Miwa teaches a twisted-nematic liquid crystal display which has a response time of less than 10ms (in Miwa's device, the response time is between 2-5ms) (col. 52-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Miwa having a response time of less than 10ms to be included in Takahashi's device so as to have a high response time and to have a liquid crystal display with a characteristics similar to those of CRT (see Miwa, col. 5, lines 60-65).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view Kubota et al. (US patent NO. 5,907,313; hereinafter referred to as Kubota).

As can be seen above with respect to claim 13, Takahashi teaches all the limitations of claims 18 except the citation that the gate driver includes a plurality of gate driver circuits connected together in series.

However, Kubota (figure 9) teaches a liquid crystal display device that includes a plurality of gate drivers connected in series (col. 4, lines 23-37).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Kubota having a plurality of gate drivers connected in series to be incorporated to Takahashi so as to increase the speed of the display.

(11) Response to Argument

Appellant (middle of page 5 to page 7) that the Takahashi reference fails to suggest all of the features of the claimed invention (in claims 1 and 4) because while claim 1 recites "applying a first signal through the data lines for charging during the beginning of a frame and applying a second signal different from the first signal through the data lines for discharging during an ending of the frame", Takahashi fails to teach that the first signal is applied during the beginning of the frame, and the second signal applied during the ending of the frame. Examiner respectfully disagrees.

Examiner refuses to admit that applying a second signal during the ending of the frame necessarily means that such signal has to be applied during the second half of the frame. The second signal can be applied exactly at the end of the frame and still considered to be applied during the ending of the frame. Therefore, even if for the sake of argument the examiner agrees with the appellant's argument that Takahashi discloses applying second data signal in the first horizontal period of the next frame (as admitted by appellant in middle of page 6), examiner still believes that Takahashi discloses the claimed limitation simply because the next frame is located immediately at the end of the preceding frame. On the other hand, Takahashi specifically recites "According to the present invention, as described above, overcharging can be adequately performed even if the first half $\frac{1}{2} H$ of one horizontal period H is set as overcharging period T_{dc} while the second half $\frac{1}{2} H$ is set as discharging period T_d ." (Col. 14, lines 25-30, col. 15, lines 1-4 and col. 15, lines 41-46). This means that each period (i.e., frame) is divided into overcharging (i.e., charging) period in time T_{dc} in the first half and discharging in the second half of the same period in time T_d . Comparing

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that to figures 8A-8D of Takahashi; we can see that during the first half of the period, a pulse for charging is applied, and during the discharge period in the second half, a pulse for discharging is applied.

With respect to Appellant's argument related to claims 5 and 8 (page 7), appellant argued that in addition to the data driver which charges and discharges during the beginning and ending of the frame, the claim recites the gate driver which applies two gate pulses and sequentially applies the first and second signals, which are not taught by Takahashi. Examiner respectfully disagrees.

With respect to the limitation of having a data driver that charges and discharges during the beginning and the ending of the frame, this limitation is thoroughly discussed above with respect to claim 1. Examiner believes that Takahashi discloses two gate pulses, which apply these signals. The gate driver in the art of active matrix liquid crystal displays such as the one taught by Takahashi can be referred to as the scanning driver (element 100 shown in figure 6). As discussed in the rejection of claim 5 above, figures 8B for example shows scanning signals. As can be clearly seen, at least two scanning signals (i.e., gate pulses) (col. 14, lines 9-17).

Appellant (first paragraph of page 8) argued that Takahashi reference does not show charging during the beginning and completely discharging before the end of the frame. Examiner respectfully disagrees. Takahashi states, "the voltage applied to the MIM element 20 and the liquid crystal layer 18 in discharging period T_{dj} becomes $V_{S2}+V_H/2$, thereby achieving adequate discharging. As result, the MIM element 20 is set in the off state, and inadequacy of overcharging is not a problem." (Col. 15, lines 32-

37). This simply means that the discharging voltage will turn of the MIM (metal insulator metal), which is connected to the liquid crystal layer 18. In turn the liquid crystal layer will be completely discharged. Appellant also argued that claim 12 further recites the length of the relative periods of the charging and discharging is not shown in Takahashi. Examiner respectfully submits that as best understood, the claim is simply directed to have the charging period is shorting than the discharging. For that, in the rejection above, the examiner referred to figure 9B, which clearly shows that the charging period is shorter than the discharging period.

Appellant (lat paragraph of page 8) argued that Takahashi does not show the use of no charge during an ending of the frame and does no show this combination of three-steps. Examiner respectfully disagrees. The examiner shows for example figure 8B wherein two opposite voltages are applied at the beginning of each frame. The ending of the frame shows only the voltage $VH/2$, which is the voltage, corresponds to the data and not for charging or discharging.

Appellant (first paragraph of page 9) argued with respect to claims 14 and 16, that Takahashi does not include the application of no charge during an ending of the frame along with the other steps of applying either a positive or negative charge, the activation of the transistor placed during a frame and having two pulses within one frame. Examiner respectfully submits that Takahashi teaches such limitations as discussed in the rejection above, and as discussed in the response to the argument of claims 5 and 13. Such response also applies to claims 14 and 16.

Appellant (first paragraph of page 10) argued with respect to claims 2 and 3 that it would not be obvious to one of ordinary skill in the art to add the teaching of Miwa to Takahashi in order to show the teachings of dependent claims 2 and 3 as they depend from claim 1. Examiner respectfully submits that Miwa's reference was cited to show that the liquid crystal device of Takahashi could be of ferroelectric or anti-ferroelectric type. The motivation of combining the two references is clearly stated in the rejection above. Similarly with respect to claims 6-7 which are substantially similar to claims 2-3.

Appellant (last paragraph of page 10) argued with respect to claim 18 that there is no motivation shown for one skilled in the art to include the gate driver of Kubota et al. into the device of Takahashi. Examiner respectfully submits that such motivation is clearly stated in the rejection above, and that is to increase the speed of the display because as it is known in the art of display, having a plurality of drivers instead of one drivers would increase the speed of the display in the trade of increasing the price of the device. As to the argument that the claim discloses having at least two gate pulses within one frame interval, this argument has been answered in the response to claim 5 above.

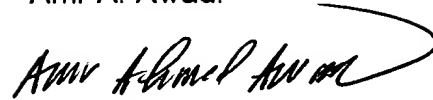
For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

Amr A. Awad.



A.A.
August 23, 2004

Conferees
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Summary

The United States Patent and Trademark Office (Office or USPTO) plans in the near future to: (1) cease mailing copies of U.S. patents and U.S. patent application publications (US patent references) with Office actions except for citations made during the international stage of an international application under the Patent Cooperation Treaty and those made during reexamination proceedings; and (2) provide electronic access to, with convenient downloading capability of, the US patent references cited in an Office action via the Office's private Patent Application Information Retrieval (PAIR) system which has a new feature called "E-Patent Reference." Before ceasing to provide copies of U.S. patent references with Office actions, the Office shall test the feasibility of the E-Patent Reference feature by conducting a two-month pilot project starting with Office actions mailed after December 1, 2003. The Office shall evaluate the pilot project and publish the results in a notice which will be posted on the Office's web site (www.USPTO.gov) and in the Patent Official Gazette (O.G.). In order to use the new E-Patent Reference feature during the pilot period, or when the Office ceases to send copies of U.S. patent references with Office actions, the applicant must: (1) obtain a digital certificate from the Office; (2) obtain a customer number from the Office, and (3) properly associate applications with the customer number. The pilot project does not involve or affect the current Office practice of supplying paper copies of foreign patent documents and non-patent literature with Office actions. Paper copies of references will continue to be provided by the USPTO for searches and written opinions prepared by the USPTO for international applications during the international stage and for reexamination proceedings.

Description of Pilot Project to Provide Electronic Access to Cited U.S. Patent References

On December 1, 2003, the Office will make available a new feature, E-Patent Reference, in the Office's private PAIR system, to allow more convenient downloading of U.S. patents and U.S. patent application publications. The new feature will allow an authorized user of private PAIR to download some or all of the U.S. patents and U.S. patent application publications cited by an examiner on form PTO-892 in Office actions, as well as U.S. patents and U.S. patent application publications submitted by applicants on form PTO/SB08 (1449) as part of an IDS. The retrieval of some or all of the documents may be performed in one downloading step with the documents encoded as Adobe Portable Document format (.pdf) files, which is an improvement over the current page-by-page retrieval capability from other USPTO systems.

Steps to Use the New E-Patent Reference Feature During the Pilot Project and Thereafter

Access to private PAIR is required to utilize E-Patent Reference. If you don't already have access to private PAIR, the Office urges practitioners, and applicants not represented by a practitioner, to take advantage of the transition period to obtain a no-cost USPTO Public Key Infrastructure (PKI) digital certificate, obtain a USPTO customer number, associate all of their pending and new application filings with their customer number, install no-cost software (supplied by the Office) required to access private PAIR and E-Patent Reference feature, and make appropriate arrangements for Internet access. The full instructions for obtaining a PKI digital certificate are available at the Office's Electronic Business Center (EBC) web page at: <http://www.uspto.gov/ebc/downloads.html>. Note that a notarized signature will be required to obtain a digital certificate.

To get a Customer Number, download and complete the Customer Number Request form, PTO-SB125, at: <http://www.uspto.gov/web/forms/sb0125.pdf>. The completed form can then be transmitted by facsimile to the Electronic Business Center at (703) 308-2840, or mailed to the address on the form. If you are a registered attorney or patent agent, then your registration number must be associated with your customer number. This is accomplished by adding your registration number to the Customer Number Request form. A description of associating a customer number with an application is described at the EBC web page at: http://www.uspto.gov/ebc/registration_pair.html.

The E-Patent Reference feature will be accessed using a new button on the private PAIR screen. Ordinarily all of the cited U.S. patent and U.S. patent application publication references will be available over the Internet using the Office's new E-Patent Reference feature. The size of the references to be downloaded will be displayed by E-Patent Reference so the download time can be estimated. Applicants and registered practitioners can select to download all of the references or any combination of cited references. Selected references will be downloaded as complete documents as Adobe Portable Document Format (.pdf) files. For a limited period of time, the USPTO will include a copy of this notice with Office actions to encourage applicants to use this new feature and, if needed, to take the steps outlined above in order to be able to utilize this new feature during the pilot and thereafter.

During the two-month pilot, the Office will evaluate the stability and capacity of the E-Patent Reference feature to reliably provide electronic access to cited U.S. patent and U.S. patent application publication references. While copies of U.S. patent and U.S. patent application publication references cited by examiners will continue to be mailed with Office actions during the pilot project, applicants are encouraged to use the private PAIR and the E-Patent Reference feature to electronically access and download cited U.S. patent and U.S. patent application publication references so the Office will be able to objectively evaluate its performance. The public is encouraged to submit comments to the Office on the usability and performance of the E-Patent Reference feature during the pilot. Further, during the pilot period registered practitioners, and applicants not represented by a practitioner, are encouraged to experiment with the feature, develop a proficiency in using the feature, and establish new internal processes for using the new access to the cited U.S. patents and U.S. patent application publications to prepare for the anticipated cessation of the current Office practice of supplying copies of such cited

references. The Office plans to continue to provide access to the E-Patent Reference feature during its evaluation of the pilot.

Comments

Comments concerning the E-Patent Reference feature should be in writing and directed to the Electronic Business Center (EBC) at the USPTO by electronic mail at eReference@uspto.gov or by facsimile to (703) 308-2840. Comments will be posted and made available for public inspection. To ensure that comments are considered in the evaluation of the pilot project, comments should be submitted in writing by January 15, 2004.

Comments with respect to specific applications should be sent to the Technology Centers' customer service centers. Comments concerning digital certificates, customer numbers, and associating customer numbers with applications should be sent to the Electronic Business Center (EBC) at the USPTO by facsimile at (703) 308-2840 or by e-mail at EBC@uspto.gov.

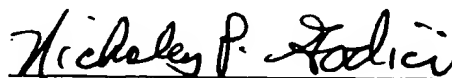
Implementation after Pilot

After the pilot, its evaluation, and publication of a subsequent notice as indicated above, the Office expects to implement its plan to cease mailing paper copies of U.S. patent references cited during examination of non provisional applications on or after February 2, 2004; although copies of cited foreign patent documents, as well as non-patent literature, will still be mailed to the applicant until such time as substantially all applications have been scanned into IFW.

For Further Information Contact

Technical information on the operation of the IFW system can be found on the USPTO website at <http://www.uspto.gov/web/patents/ifw/index.html>. Comments concerning the E-Patent Reference feature and questions concerning the operation of the PAIR system should be directed to the EBC at the USPTO at (866) 217-9197. The EBC may also be contacted by facsimile at (703) 308-2840 or by e-mail at EBC@uspto.gov.

Date. 12/1/03



Nicholas P. Godici
Commissioner for Patents

USPTO TO PROVIDE ELECTRONIC ACCESS TO CITED U.S. PATENT REFERENCES WITH OFFICE ACTIONS AND CEASE SUPPLYING PAPER COPIES

In support of its 21st Century Strategic Plan goal of increased patent e-Government, beginning in June 2004, the United States Patent and Trademark Office (Office or USPTO) will begin the phase-in of its E-Patent Reference program and hence will: (1) **provide downloading capability of the U.S. patents and U.S. patent application publications cited in Office actions** via the E-Patent Reference feature of the Office's Patent Application Information Retrieval (PAIR) system; and (2) **cease mailing paper copies of U.S. patents and U.S. patent application publications with Office actions** (in applications and during reexamination proceedings) except for citations made during the international stage of an international application under the Patent Cooperation Treaty (PCT). In order to use the new E-Patent Reference feature applicants must: (1) obtain a digital certificate and software from the Office; (2) obtain a customer number from the Office; and (3) properly associate patent applications with the customer number. Alternatively, copies of all U.S. patents and patent application publications can be accessed without a digital certificate from the USPTO web site, from the USPTO Office of Public Records; and from commercial sources. The Office will continue the practice of supplying paper copies of foreign patent documents and non-patent literature with Office actions. Paper copies of cited references will continue to be provided by the USPTO for international applications during the international stage.

Schedule

June 2004	TCs 1600, 1700, 2800 and 2900
July 2004	TCs 3600 and 3700
August 2004	TCs 2100 and 2600

All U.S. patents and U.S. patent application publications are available on the USPTO web site. However, a simple system for downloading the cited U.S. patents and patent application publications has been established for applicants, called the E-Patent Reference system. As E-Patent Reference and Private PAIR require participating applicants to have a customer number, retrieval software and a digital certificate, all applicants are strongly encouraged to contact the Patent Electronic Business Center to acquire these items. To be ready to use this system by June 1, 2004, contact the Patent EBC as soon as possible by phone at 866-217-9197 (toll-free), 703-305-3028 or 703-308-6845 or electronically via the Internet at ebc@uspto.gov.

Other Options

The E-Patent Reference function requires the applicant to use the secure Private PAIR system, which establishes confidential communications with the applicant. Applicants using this facility must receive a digital certificate, as described above. Other options for obtaining patents which do not require the digital certificate include the USPTO's free Patents on the Web program (<http://www.uspto.gov/patft/index.html>). The USPTO's Office of Public Records also supplies copies of patents for a fee (<http://ebiz1.uspto.gov/oems25p/index.html>). Commercial sources also provide U.S. patents and patent application publications.

For complete instructions see the Official Gazette Notice, USPTO TO PROVIDE ELECTRONIC ACCESS TO CITED U.S. PATENT REFERENCES WITH OFFICE ACTIONS AND CEASE SUPPLYING PAPER COPIES, on the USPTO web site.